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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FULLER, RODNEY EVAN

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 09 27 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941,885

Examiner

Rodney E Fuller

Applicant(s)

LUCAS, WALTER A.

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 & 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because of the phrase "This invention generally relates to..." which can be implied. Correction is required. See MPEP § 608.01(b).

Drawings

3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following items must be shown or the feature(s) canceled from the claim(s):
 - a. (claim 11, lines 3-7) "a camera and lens." "the longitudinal and transverse axis of the camera and lens." and "the film."
 - b. (claim 17, lines 4-8) "a camera and lens." "lens having a front surface." the longitudinal and transverse axis of the camera and lens."

- c. (claim 20, lines 1-5) "film." "camera and lens." (the longitudinal and transverse axis of the camera and lens."

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 1-5, 7, 11, 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Elson, et al. (US 6,017,276).

Elson (US 6,017,276) discloses all the structure set forth in the claims. Regarding claims 1, 11, 17, 19-21, Elson (US 6,017,276) discloses "...an image projector (Fig. 1a, ref.# 3); the image includes a horizon; the projector having a centerline of projection; a lens on the projector having an axial centerline to the centerline of the projector; an audience viewing station (Fig. 1a, ref.# 2) for one or more viewers of the projected image; the audience viewing location having a viewing location; the projector is located

at a position away from the viewing location (in Figure 1a the projector #3 is above the seats #2); the centerline of projection and the axial centerline of the projector are substantially horizontal (in Figure 1a, the projector #3 is substantially horizontal); and the centerline of the lens is positioned relative to the centerline of projection sufficient to place the horizon on the curved screen at approximately the eye level of the viewer positioned at the viewing location (in Figure 1a, the horizon on the screen at approximately where reference # 4 is indicated is at eye level of the viewer at the approximate location of ref.# 10)."

Regarding claim 2, Elson (US 6,017,276) discloses "...wherein the centerline of projection and the axial centerline of the lens are vertically aligned." (Note: The centerline of projection and the axial centerline of a lens in a projector will inherently be vertically aligned.)

Regarding claim 3, Elson (US 6,017,276) discloses "...wherein the viewing location has a center area." (Note: In Figure 1c, the middle seat on the second row can be considered a "center area.")

Regarding claim 4, Elson (US 6,017,276) discloses "...wherein the viewer is positioned at the center position." (Note: In Figure 1c, the middle seat where a viewer is positioned can be considered the "center position.")

Regarding claim 5, Elson (US 6,017,276) discloses "...wherein the projector is located at a position away from the center area." (Note: In Figure 1c, the projector is positioned above the center area.)

Regarding claim 7, Elson (US 6,017,276) discloses "...wherein the horizon on the curved surface is substantially horizontal. (Fig. 1a, note area of screen where line is drawn to ref.# 4)

Regarding claim 18, Elson (US 6,017,276) discloses "...wherein the curved surface has a side with a positive radius of curvature, the side with a positive curvature positioned toward the projector." (Fig. 1a, ref.#s 3, 4)

7. Claims 1-4, 7-11, 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayashi (US 5,845,434).

Hayashi (US 5,845,434) discloses all the structure set forth in the claims.

Regarding claims 1, 11, 17, 19-21. Hayashi (US 5,845,434) discloses "...an image projector (Fig. 2, ref.# 14); the image includes a horizon; the projector having a centerline of projection; a lens on the projector having an axial centerline to the centerline of the projector; an audience viewing station (Fig. 2, ref.# 9) for one or more viewers of the projected image; the audience viewing location having a viewing location; the projector is located at a position away from the viewing location (in Figure 2, the projector #14 is above and below the seats #16); the centerline of projection and the axial centerline of the projector are substantially horizontal (in Figure 2, the projector #14 is substantially horizontal); and the centerline of the lens is positioned relative to the centerline of projection sufficient to place the horizon on the curved screen at approximately the eye level of the viewer positioned at the viewing location (in Figure 12, the horizon on the

screen at approximately at eye level of the viewer at the approximate location of ref.# 9a)."

Regarding claim 2, Hayashi (US 5,845,434) discloses "...wherein the centerline of projection and the axial centerline of the lens are vertically aligned." (Note: The centerline of projection and the axial centerline of a lens in a projector will inherently be vertically aligned.)

Regarding claim 3, Hayashi (US 5,845,434) discloses "...wherein the viewing location has a center area." (Note: In Figure 2, a viewer in location represented by ref.# 9a can be considered a "center area.")

Regarding claim 4, Hayashi (US 5,845,434) discloses "...wherein the viewer is positioned at the center position." (Note: In Figure 3, a viewer can be positioned in the projection booth ref.# 9a and can be considered the "center position.")

Regarding claim 7, Hayashi (US 5,845,434) discloses "...wherein the horizon on the curved surface is substantially horizontal. (Fig. 2, note area of screen opposite projector area located at ref.# 9a)

Regarding claim 8, Hayashi (US 5,845,434) discloses "...wherein in plan view the projector lens front is located forward of the viewing location." (Fig. 8, ref.# 14, 16)

Regarding claim 9, Hayashi (US 5,845,434) discloses "...wherein the projector lens front is forward of the audience viewing station." Fig. 8, ref.# 14, 16)

Regarding claim 10, Hayashi (US 5,845,434) discloses "...wherein the projector lens projects the image approximately 38 degrees above the horizon centerline of the curved screen and down to generally 90 degrees below the horizontal centerline of the

curved screen." (Note: The projector setup in shown in Figure 2 will project light approximately + / - 90 degrees above and below the horizontal centerline of the screen. Hence, the projector setup will also project the image to approximately 38 degrees above the horizon centerline.)

Regarding claim 18, Hayashi (US 5,845,434) discloses "...wherein the curved surface has a side with a positive radius of curvature, the side with a positive curvature positioned toward the projector." (Fig. 2, ref.#s 3, 14)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 5,845,434) in view of Heilig (US 3,469,837).

Hayashi (US 5,845,434) discloses all the structure set forth in the claims except for the structure of the curved screen wherein "...at least two panels forming a portion of the curved surface, each panel having a top edge and a bottom edge, the top edge of each panel being nearer to the uppermost portion of the curved surface than the bottom edge of the same panel; each of the at least two panels having an interior surface facing a viewer at the viewer location; the interior surface of each of the at least two panels having a reflective portion; the upper edge of one of the least two panels being positioned to

Art Unit: 2851

overlap at least a portion of the bottom edge and at least a portion of the interior surface of another one of the at least two panels, defining an overlapping portion.” However, the use of a curved screen made up of individual panels that overlap each other and have a reflective surface is routine in the art as is evident from the teaching of Heilig (US 3,469,837) (see Figures 13-16 and column 4, lines 39-75). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hayashi (US 5,845,434) to include a screen wherein “...at least two panels forming a portion of the curved surface, each panel having a top edge and a bottom edge, the top edge of each panel being nearer to the uppermost portion of the curved surface than the bottom edge of the same panel; each of the at least two panels having an interior surface facing a viewer at the viewer location; the interior surface of each of the at least two panels having a reflective portion; the upper edge of one of the least two panels being positioned to overlap at least a portion of the bottom edge and at least a portion of the interior surface of another one of the at least two panels, defining an overlapping portion.” The ordinary artisan would have been motivated to modify Hayashi (US 5,845,434) in the manner described above to (1) maintain polarization, (2) minimize hotspots, and (3) maximize utilization of available light energy as described by Heilig (US 3,469,837) in column 5, lines 15-18.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Fuller whose telephone number is (703) 306-5641. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847.

Rodney Fuller
Primary Examiner

A handwritten signature in black ink, appearing to read 'R. Fuller', is written over the printed name of the examiner.

September 24, 2002